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ABSTRACT

An annotated bibliography by Raymond Preiss published in 1986 focused on Language Intensity in relation to persuasion. By contrast, this new 37-item annotated bibliography takes a broader look at probability language to expand upon Preiss's collection of sources, including some earlier and some later sources. Noting that the literature on logical qualifiers or probability words is divergent in perspectives and operational definitions, the bibliography begins with a schema of terminology with example citations and selected words from the sources in the bibliography. The material in the bibliography is divided into four sections: classic theories on probability language; probability qualifiers; intensity and power issues; and quantifiers and frequency words. The books, journal articles and theses in the bibliography were published between 1941 and 1989. (RS)

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Logical Probability Language

(An annotated bibliography by)

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The literature on logical qualifiers or probability words is divergent in perspectives and operational definitions. Although researchers often look at the same words or phrases, the operational and conceptual definitions differ and at times appear confusing or even contradictory. Building on Toulmin's (1964) model of argument, Feezel (1974) defined qualifiers as words or strings used with assertions to modify the likelihood or strength of belief in the assertion. Other researchers have used the related terms of verbal probabilities; language intensifiers; intensive, probabilistic & frequency adverbs; modals; and vague quantifiers. Distinctions within this broad area can be shown by the following schema of terminology, with example citations and selected words from the sources annotated on the following pages.

A. Qualifiers, Verbal probabilities (Feezel 1974; Infante, et al. 1980)
probabilistic qualifiers (Howe 1962)
probabilistic adverbs (Lilly 1968b)
modal adjectives (Reyna 1981)

(eg. *certainly, I know, it is certain, probably, I believe, likely, I suspect, possible, conceivably, undeniably, doubtfully, supposedly, apparently, doubtlessly, definite, necessary, feasible, etc.)*

B. Language intensifiers (Howe 1962)
intensive adverbs (Cliff 1959)
intensifiers, hedges (Bradac, et al. 1981)

(eg., *slightly, rather, quite, extremely, repeatedly, rarely, instantly, soon, surely, kind of, I guess, somewhat, decidedly, unusually, very, etc.)*

C. Quantifiers (Chase 1969)
frequency adverbs (Howe 1966)
vague quantifying adverbs (Bradburn & Miles 1979)

(eg., *always, frequently, often, sometimes, occasionally, never, seldom, very often, pretty often, not too often, completely, generally, now and then, about as often as not, usually, all, many, some, few, no, etc.)*

An SCA Annotated Bibliography by Raymond Preiss in 1986 focused on *Language Intensity* (primarily category B) in relation to persuasion, but none of the sources here were covered in Preiss' annotations. Our bibliography takes a broader look at probability language to expand upon his collection of sources, including some earlier and some later than those cited by him.

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I. Classic Theories on Probability Language

Austin, J. L. (1965). Other Minds. In A. Flew (Ed.) Logic and language, 1st and 2nd Series, (pp. 342-380). Garden City, NY: Anchor Books/ Doubleday. *A classic philosophical essay, edited from a 1946 work on uses of language, that asserted our inability to know another's mind. This analytic (Oxford) language philosopher discusses "sure" and "certain" as not equivalent to "I know."*

Gibb, J. (1961). Defensive Communication. Journal of Communication, 11, 141-148. *His theory asserted that a speaker who uses "certainty" (rather than "provisionalism") causes more defensiveness in the listener.*

Harris, S. J. (1988). Sociolinguistic approaches to media language. Critical Studies in Mass Communication, 5, 72-82. *This critical essay argued for future research in media language focused on interviewers or personae using qualifiers and modal verbs indicating their degree of commitment to propositions.*

Toulmin, S. E. (1964). The uses of argument. London: Cambridge University Press. *A backbone theory that identified the six elements of argument to include "qualifiers" attached to "claims." In the analytic language philosophy tradition, an extensive chapter focused upon the probability indicated by the words used.*

Toulmin, S. E., Rieke, R. S., & Janik, A. (1984). An introduction to reasoning. New York: Macmillan. *A chapter analyzes modal qualifier uses in arguments of law, science & everyday life: for tentative, conditional or provisional claiming, to stimulate discussion, and simply to offer assurance.*

Urmson, J. O. (1956). Parenthetical verbs. In A. Flew (Ed.) Essays in conceptual analysis (pp. 192-212). London: Macmillan. *One subcategory of verbs added to statements (e.g., I suppose, regret, etc.) included those marking degrees of belief or probability (know, believe, suspect, etc.). Related adverb forms were also noted in this classic Oxford philosophy essay.*

II. Probability Qualifiers

Espinal, M. T. (1987). Modal adverbs and modality scales. Lingua, 72, 293-314. *In a highly technical linguistics study, the author described how probability adverbs (eg., certainly, possibly, truly) order along modality scales. The types of probabilities attributed to the proposition are related to a concept of "possible worlds."*

Feezel, J. D. (1974). A qualified certainty: Verbal probability in argument. Speech Monographs, 41, 348-356. *This study varied qualifiers of three degrees (possibility, likelihood, and certainty) in argument pairs. High school and college students attributed different strengths to these in relation to unqualified arguments.*

Howe, E. S. (1962). Probabilistic adverbial qualification of adjectives. Journal of Verbal Learning and Verbal behavior, 1, 225-242. *Based on Cliff (1959), this study discovered that using a combination of probabilistic and intensive adverbs altered the connotative meaning of descriptive adjectives.*

Infante, D. A., Osborne, W. J., & Pierce, L. L. (1980). Attitudes toward cultural role expectations as mediators of response to certainty in women's speech. The Ohio Speech Journal, 37-43. *Qualifiers in women's speech were divided by high and low verbal probabilities. People with more liberal attitudes towards women viewed women more favorably when they employed high verbal probability in their statements.*

Land, M. L. (1985). Vagueness and clarity in the classroom. In T. Husen & T. N. Postlethwaite (Eds.), International encyclopedia of education: Research and studies (Vol. 9, pp. 5405-5410). Oxford: Pergamon Press. *This review of research on vagueness terms (including quantifiers, frequency adverbs, possibility and probability words) suggested they interfere with learning because students perceive the teacher as uncertain about the subject.*

Lilly, R. S. (1968a). The qualification of evaluative adjectives by frequency adverbs. Journal of Verbal Learning and Verbal Behavior, 7, 333-336. *Extending on the above study with positive and negative frequency adverbs, he again found a multiplicative function in the effects on adjectives.*

Lilly, R. S. (1968b). Multiplying values of intensive, probabilistic and frequency adverbs when combined with potency adjectives. Journal of Verbal Learning and Verbal Behavior, 7, 854-858. *Adverbs were combined with adjectives and evaluated on their strength; findings supported and extended Cliff's (1959) multiplicative function.*

Lilly, R. S. (1969). Adverbial qualification of adjectives connotating activity. Journal of Verbal Learning and Verbal Behavior, 8, 313-315. *Intensive, probabilistic, and frequency adverbs modifying activity dimension adjectives were found to alter the meaning of the adjectives in a multiplicative way.*

Lilly, R. S., & Rajecki, D. W. (1969). Scale values of the comparative and superlative forms of adjectives as a function of the basic form scale values. Psychological Reports, 24 (2), 399-403. *This study examined the comparative and superlative forms of the same adjective and determined that a multiplicative effect existed.*

Montgomery, B. M. (1982). Verbal immediacy as a behavioral indication of open communication content. Communication Quarterly, 30, 28-34. *Probability qualifiers were treated as one variable defining the verbal immediacy construct. The use of such probability words seemed to be related to a lower level of openness.*

Reyna, V. F. (1981). The language of possibility and probability: Effects of negation on meaning. Memory & Cognition, 9, 642-65. *The relationship of modal adjectives to degrees of qualification was found to be similarly quantified whether affirmative or negative forms. The second study found that negative affixes (eg., un, non) connoted lower probabilities than lexical negatives (not, none).*

III. Intensity and Power Issues

Bradac, J. J., Hemphill, M. R., & Tardy, C. H. (1981). Language style on trial: Effects of "powerful" and "powerless" speech of victims and villains. Western Journal of Speech

Communication, 45, 327-341. *A hypothetical courtroom setting was used to find that intensifiers, hedges, polite forms, deictic phrases, and hesitations produced judgments of low power. Absence of these forms in addition to short replies produced high power judgments.*

Bradac, J. J., & Mulac, A. (1984a). A molecular view of powerful and powerless speech styles: Attributional consequences of specific language features and communicator intentions. Communication Monographs, 51, 307-319. *Two studies of many language style factors found that interviewees using intensifiers were perceived as more powerful and effective, but hedges (weak qualifiers) and gender of source did not affect perceptions of power.*

Bradac, J. J., & Mulac, A. (1984b). Attributional consequences of powerful and powerless speech styles in a crisis-intervention context. Journal of Language and Social Psychology, 3 (1), 1-19. *This study found that a powerful style created the more favorable interpersonal attributions in a counselor-client relationship.*

Hosman, L. A. (1989). The evaluative consequences of hedges, hesitations, and intensifiers: Powerful and powerless speech styles. Human Communication Research, 15, 383-406. *Messages using intensifiers and hedges singly and in combinations yielded no differences in the sociability or authoritativeness ratings of the source.*

Johnson, C. E. (1987). An introduction to powerful and powerless talk in the classroom. Communication Education, 36, 167-172. *Instructional guidelines are given to help students use powerful strategies. Eliminating hedges/qualifiers, tag questions, and disclaimers helped them to be viewed as more competent, trustworthy & dynamic.*

McMillan, J. R., Clifton, A. K., McGrath, D., & Hale, W. S. (1977). Women's language: Uncertainty or interpersonal sensitivity and emotionality? Sex Roles, 3, 545-559. *Although "intensifiers" were operationalized differently here, modal constructions and two other forms differentiated women from men. The authors raised the issue of whether the language forms used reflected uncertainty and subordination or aspects of women's culture.*

Miller, M. D., Reynolds, R. A., & Cambra, R. E. (1987). The influence of gender and culture on language intensity. Communication Monographs, 54, 101-105. *Two groups of Asian-American men (Japanese and Chinese backgrounds) used more intense words than did Asian-American women, but Caucasians did not differ in use by gender.*

Mulac, A., Lundell, T. L., & Bradac, J. J. (1986). Male/female language differences and attributional consequences in a public speaking situation: Toward an explanation of the gender-linked language effect. Communication Monographs, 53, 116-129. *The researchers analyzed students first public speeches for 35 linguistic features, only a few pertaining to logical probabilities. They speculated that women using more tentativeness or uncertainty than men could be a sign of interpersonal sensitivity.*

O'Barr, W. M. (1982). Linguistic, evidence: Language, power and strategy in the courtroom, (pp. 61-75). New York, NY: Academic Press. *Witnesses speech styles were examined for powerful and powerless styles of men and women. Intensifiers, hedges, and hesitations were associated more with social powerlessness than gender.*

Shapiro, S. (1980). The effects of language intensity and message intensity-ratio upon attitude change and source credibility. Unpublished master's thesis, Kent State University, Kent, OH. *Language intensity research was reviewed and integrated into a message intensity-ratio, calculated by the number of intense words in a message divided by the total number of words in the message.*

Wright, J. W. & Hosman, L. A. (1983). Language style and sex bias in the courtroom: The effects of male and female use of hedges and intensifiers on impression formation. The Southern Speech Communication Journal, 48, 137-152. *The study found that women witnesses using certainty terms and avoiding weaker qualifiers were viewed as more powerful, attractive and credible.*

IV. Quantifiers and Frequency Words

Abelson, R. P., & Kanouse, E. E. (1966). Subjective acceptance of verbal generalizations. In S. Feldman (Ed.) Cognitive consistency: Motivational antecedents and behavioral consequents. New York: Academic Press. *The ambiguity of "generic assertions" (unqualified generalizations) was compared to those with quantification. Semantic dimensions of a verb interacted with deductive and inductive evidence forms and they speculated on the relevance to persuasive attempts or propaganda.*

Bradburn, N. M., & Miles, C. (1979). Vague quantifiers. Public Opinion Quarterly, 43, (1), 92-101. *The authors theorized that the impressions given by quantifying adverbs will vary according to the context, receiver, and words they modify.*

Chase, C. I. (1969). Often is where you find it. American Psychologist, 24, 1043. *In support of the authors view that word context should be examined to study word meanings, two scales were created. Low frequency and high frequency words were examined with a significant difference found between scales.*

Cliff, N. (1959). Adverbs as multipliers. Psychological Review, 66, 27-44. *The author devised and tested an equation with nine intensive adverbs and 15 evaluative adjectives. Matrices of the adverbial and adjectival values supported the multiplicative equation.*

Holyoak, K. J. & Glass, A. L. (1978). Recognition confusions among quantifiers. Journal of Verbal Learning and Verbal Behavior, 17, 249-264. *The study examined how people comprehend, use, and recall quantifiers, finding support for a linear ordering from "all" to "none" with some confusions of adjacent pairs on the quantifier scale.*

Howe, E. S. (1966). Verb tense, negatives, and other determinates of intensity of evaluative meaning. Journal of Verbal Learning and Verbal Behavior, 5, 147-155. *This extension of Howe (1962) included different adverbial modifiers such as proximity, frequency, verb tense, and negatives. Results showed a high correlation between predicted and observed scale values.*

Kanouse, D. E. (1972). Verbs as implicit quantifiers. Journal of Verbal Learning and Verbal Behavior, 11, 141-147. *Two studies of verbs in simple subject-verb-object sentences revealed that subjective verbs implied larger quantities of the object than did objective verbs, and likewise with negative over positive verbs.*

Mosier, C. I. (1941). A psychometric study of meaning. Journal of Social Psychology, 13, 123-140. *Word meaning was conceptualized by two components: constant (or fixed point) and variable (where adverb intensifiers shift the modified words along points of a continuum).*

Newstead, S. E., & Griggs, R. A. (1983). Drawing inferences from quantified statements: A study of the square of opposition. Journal of Verbal Learning and Verbal Behavior, 22, 535-546. *Quantifiers were examined in two studies to identify how people reasoned using quantifiers and how people tried to remember them.*

<**Probably** the end for now, but **possibly** a beginning for others.>